



CITY OF YELLOWKNIFE

## Water Line Freeze Protection

### *Helpful Tips*

#### City Water Distribution System Details

The City of Yellowknife has a unique and complex water distribution system. Due to severe cold weather temperatures the City tempers and constantly circulates potable drinking water. This circulation allows our infrastructure to be placed underground with minimal risk of freezing.

Most individual water services are comprised of dual insulated copper lines, as shown in Figure 1 and 2, below. In between these lines is a small circulation pump (also called a circ pump) that provides constant flow in both copper pipes. Moving water is less likely to freeze than still water, thus providing freeze protection.

The average life of a circ pump in Yellowknife is 5-8 years, after which time it should be replaced. The approximate cost of a circ pump is \$400.00 and they can be found at various retailers in the city.

*Residents with service in poor repair may qualify for the City's Service Connection Failure Assistance Program (SCFA). For more information on SCFA, and to find out if your systems qualifies for it, please call 867-920-5600 for more information. Always contact Public Works before alteration of any water and sewer service.*

**“Freeze Protection is ultimately a homeowner responsibility.”**

#### **For More Information:**

[www.yellowknife.ca](http://www.yellowknife.ca)

**867.920.5600** or [communications@yellowknife.ca](mailto:communications@yellowknife.ca)

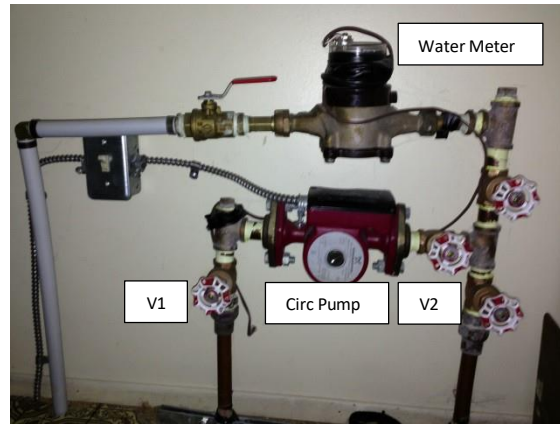


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## Severe Cold Weather Power Outage Procedure

### **2-LINE SYSTEM**

This procedure can help you to keep both lines open during a cold weather power outage on the dual line system.



**Figure 1: Dual Copper Line Water Service**

*Step 1: Locate your circulation pump, which should look similar to Figure 1, above. You will see there are two gate valves, which are labeled V1 and V2 in the figure. Find these valves on your pump.*

*Step 2: Turn the V1 valve clockwise to close it.*

*Step 3: Pick a plumbing fixture in your house, such as a tap, and run the water for 2-3 minutes.*

*Step 4: Turn the tap off.*

*Step 5: Turn the V1 valve counterclockwise to open it back up.*

*Step 6: Turn the V2 valve clockwise to close it.*

*Step 7: Run the tap for another 2-3 minutes.*

*Step 8: Turn the tap off.*

*Step 9: Turn the V2 valve counterclockwise to open it back up.*

*Step 10: Repeat steps 2-9 every 15-20 minutes until the power is restored. Pick a different plumbing fixture each time to ensure water is circulated through the home.*

*Step 11: Once power is restored, make sure that both valves are left in the open position (turned counterclockwise) and that the circulation pump is running.*

**Each building is different; there are no guarantees of freeze protection during a power outage.**



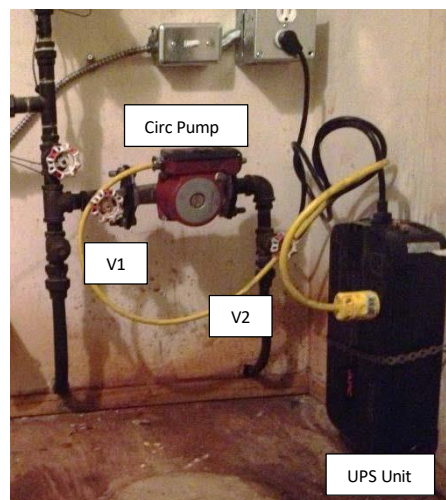
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## Uninterruptible Power Supply (UPS) Installation

An uninterruptible power supply (UPS) unit may be installed on a dual-line water system to maintain power to the circ pump during times of a power outage. The units are equipped with deep cell batteries that can be replaced. UPS systems are used by many people to maintain a functioning computer system during a loss of electricity.

These units can be purchased from electronics retailers in the city. The price can range from \$150 - \$1000.

A lower-end UPS unit can power a circ pump for approximately one hour. Higher-end models will extend the time that a UPS unit will maintain power.



**Figure 2: Dual Copper Line Water Service with UPS**

A qualified electrician should be consulted to ensure a proper sized unit is used. An electrician may also be required to provide an approved power receptacle and a wired plug on the circ pump. A little upfront cost could save homeowners a larger expense of a freeze up or a water break.